

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (Currently amended) A method for implementing a sleep proxy,
2 comprising:

3 receiving a request at the sleep proxy for information pertaining to a
4 service provided by a device;

5 determining if the device is a member of a list of devices~~device~~ for which
6 the sleep proxy answers;

7 if so, determining if the request is a request for which the sleep proxy can
8 answer; and

9 if so, sending a response to the request on behalf of the device.

1 2. (Original) The method of claim 1, wherein if the request is not a
2 request for which the sleep proxy can answer, the method further comprises
3 sending a wakeup packet to the device, wherein the wakeup packet is a packet that
4 causes the device to exit a power-saving mode.

1 3. (Original) The method of claim 1, wherein prior to receiving the
2 request, the method further comprises:

3 receiving a registration request from the device, wherein the registration
4 request contains:

5 sufficient information to allow the sleep proxy to generate a
6 wakeup packet that can wake up the device, and

7 a list of requests for which the sleep proxy can answer; and
8 adding the device to the list of devices for which the sleep proxy answers.

1 4. (Original) The method of claim 3, wherein the registration
2 additionally contains a lease expiration time, wherein upon reaching the lease
3 expiration time, the sleep proxy cancels the device registration.

1 5. (Original) The method of claim 4, wherein an internal timer in the
2 device wakes up the device so that the device can renew its registration with the
3 sleep proxy before the registration expires.

1 6. (Original) The method of claim 1, further comprising:
2 receiving a notification from the device that the device is entering a
3 power-saving state; and
4 in response to the notification, configuring the sleep proxy to answer for
5 the device.

1 7. (Original) The method of claim 1, further comprising:
2 receiving a notification from the device that the device has exited a power-
3 saving state; and
4 in response to the notification, configuring the sleep proxy not to answer
5 for the device.

1 8. (Original) The method of claim 1, further comprising
2 implementing a second sleep proxy that duplicates the functionality of the sleep
3 proxy for fault-tolerance purposes.

1 9. (Original) The method of claim 1, wherein sending a response to
2 the request further comprises waiting a random period of time prior to sending the
3 response, wherein waiting the random period of time facilitates duplicate answer
4 suppression between sleep proxies.

1 10. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method for implementing a sleep proxy, the method comprising:

4 receiving a request at the sleep proxy for information pertaining to a
5 service provided by a device;

6 determining if the device is a ~~member of a list of devices~~ device for which
7 the sleep proxy answers;

8 if so, determining if the request is a request for which the sleep proxy can
9 answer; and

10 if so, sending a response to the request on behalf of the device.

1 11. (Original) The computer-readable storage medium of claim 10,
2 wherein if the request is not a request for which the sleep proxy can answer, the
3 method further comprises sending a wakeup packet to the device, wherein the
4 wakeup packet is a packet that causes the device to exit a power-saving mode.

1 12. (Original) The computer-readable storage medium of claim 10,
2 wherein prior to receiving the request, the method further comprises:

3 receiving a registration request from the device, wherein the registration
4 request contains:

5 sufficient information to allow the sleep proxy to generate a
6 wakeup packet that can wake up the device, and
7 a list of requests for which the sleep proxy can answer; and

8 adding the device to the list of devices for which the sleep proxy answers.

1 13. (Original) The computer-readable storage medium of claim 12,
2 wherein the registration additionally contains a lease expiration time, wherein
3 upon reaching the lease expiration time, the sleep proxy cancels the device
4 registration.

1 14. (Original) The computer-readable storage medium of claim 13,
2 wherein an internal timer in the device wakes up the device so that the device can
3 renew its registration with the sleep proxy before the registration expires.

1 15. (Original) The computer-readable storage medium of claim 10,
2 wherein the method further comprises:
3 receiving a notification from the device that the device is entering a
4 power-saving state; and
5 in response to the notification, configuring the sleep proxy to answer for
6 the device.

1 16. (Original) The computer-readable storage medium of claim 10,
2 wherein the method further comprises:
3 receiving a notification from the device that the device has exited a power-
4 saving state; and
5 in response to the notification, configuring the sleep proxy not to answer
6 for the device.

1 17. (Original) The computer-readable storage medium of claim 10,
2 wherein the method further comprises implementing a second sleep proxy that
3 duplicates the functionality of the sleep proxy for fault-tolerance purposes.

1 18. (Original) The computer-readable storage medium of claim 10,
2 wherein sending a response to the request further comprises waiting a random
3 period of time prior to sending the response, wherein waiting the random period
4 of time facilitates duplicate answer suppression between sleep proxies.

1 19. (Currently amended) An apparatus that implements a sleep proxy,
2 comprising:

3 a receiving mechanism configured to receive a request at the sleep proxy
4 for information pertaining to a service provided by a device;
5 a determination mechanism configured to determine if the device is a
6 member of a list of devices device for which the sleep proxy answers;
7 a second determination mechanism configured to determine if the request
8 is a request for which the sleep proxy can answer if the device is a member of the
9 list of devices for which the sleep proxy answers; and
10 a response mechanism configured to send a response to the request on
11 behalf of the device if the request is a request for which the sleep proxy can
12 answer.

1 20. (Original) The apparatus of claim 19, wherein if the request is not a
2 request for which the sleep proxy can answer, the apparatus further comprises a
3 wakeup mechanism configured to send a wakeup packet to the device that causes
4 the device to exit a power-saving mode.

1 21. (Original) The apparatus of claim 19, further comprising:
2 a registration mechanism configured to receive a registration request from
3 the device, wherein the registration request contains:

4 sufficient information to allow the sleep proxy to generate a
5 wakeup packet that can wake up the device, and
6 a list of requests for which the sleep proxy can answer; and
7 a list addition mechanism configured to add the device to the list of
8 devices for which the sleep proxy answers.

1 22. (Original) The apparatus of claim 21, wherein the registration
2 additionally contains a lease expiration time, and wherein the apparatus further
3 comprises a cancellation mechanism that is configured to cancel the device
4 registration upon reaching the lease expiration time.

1 23. (Original) The apparatus of claim 22, wherein an internal timer in
2 the device wakes up the device so that the device can renew its registration with
3 the sleep proxy before the registration expires.

1 24. (Original) The apparatus of claim 19, further comprising:
2 a notification mechanism configured to receive a notification from the
3 device that the device is entering a power-saving state; and
4 a configuration mechanism configured to configure the sleep proxy to
5 answer for the device in response to the notification.

1 25. (Original) The apparatus of claim 19, further comprising:
2 a notification mechanism configured to receive a notification from the
3 device that the device has exited a power-saving state; and
4 a configuration mechanism configured to configure the sleep proxy not to
5 answer for the device in response to the notification.

1 26. (Original) The apparatus of claim 19, further comprising a second
2 sleep proxy that duplicates the functionality of the sleep proxy for fault-tolerance
3 purposes.

1 27. (Original) The apparatus of claim 19, wherein the response
2 mechanism is further configured to wait a random period of time prior to sending
3 the response, wherein waiting the random period of time facilitates duplicate
4 answer suppression between sleep proxies.